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ABSTRACT

A comparative evaluation of the effectiveness of center-based, home-based and parent-based delivery systems for preschool intervention services was undertaken. Over a 5-year period, the Pennsylvania Research in Infant Development and Education Project enrolled more than 170 disadvantaged children in its two principal component programs: the center-based program and the home-based program. A third component, the parent-based program, was superimposed on the other two by involving 20 mothers of randomly chosen children who were simultaneously participating in either the center- or home-based programs. Children in all three programs were enrolled between the ages of 12 and 20 months for a 2-year period. Statistical analyses of pre- and posttest data on an extensive battery of test measures pooled over this 5-year period showed that both the center-based and home-based programs produced significant developmental gains, but that the center-based program was significantly more effective. The addition of the parent-based program did not result in further gains for children in either the center-based or home-based programs. (JMB)

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THE PENNSYLVANIA RESEARCH IN INFANT DEVELOPMENT AND EDUCATION PROJECT: A FIVE YEAR PERSPECTIVE

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A comparative evaluation of the effectiveness of Center-Based, Home-Based and Parent-Based delivery systems for preschool intervention services was undertaken.

Over a five-year period, the Pennsylvania Research In Infant Development and Education Project enrolled more than 170 disadvantaged children in three component preschool intervention programs, each modeled after one of the above systems. Statistical Analyses of pre- and posttest data, on an extensive battery of test measures showed both Center and Home Programs producing significant developmental gains, with significantly superior effectiveness demonstrated for the Center-Based Program.

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THE PENNSYLVANIA RESEARCH IN INFANT DEVELOPMENT AND EDUCATION PROJECT: A FIVE YEAR PERSPECTIVE

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The plight of the disadvantaged child in the American schools has been a dominant theme in education for the past decade. Since it is a well established fact that for children who begin school with a developmental disadvantage relative to their peers, this disadvantage is generally maintained and even increased through the course of their schooling, many research efforts have concentrated upon the preschool years as the focal point of their efforts to attack the problem.

Among the multitude of research and demonstration programs designed for the purpose of such preschool intervention, a myriad of different approaches and techniques have emerged. These have ranged, on the one hand, from primarily custodial care programs and programs with instructional bases modeled after the more traditional kindergartens to, on the other, programs with instructional components designed to facilitate cognitive development and programs of a highly structured academic orientation. Whatever the instructional approach utilized or the specific operational objectives selected, each program has generally employed one of three different delivery mechanisms as its principal avenue for educational intervention with disadvantaged preschoolers: the Center-Based System; the Home-Based System; and the Parent-Based System.

The Center-Based System typically involves transportation of the child to and from a centrally located educational program where the child, together with a number of other children, is exposed to developmentally enriching activities. The Home-Based System, on the other hand, usually involves one or more weekly visits by a tutor to the child's home to work directly with the child in providing a brief period of educational or developmental activities. The third avenue of approach, which can be used in lieu of or in supplement to the above approaches, is that of training the parent or parents themselves to work with their child on

developmental activities. From the standpoint of the child, this may be referred to as the Parent-Based System. This type of program involves a dependence upon the effectiveness of parents, guardians or significant others in working directly with their children in place of the outside tutor. It also depends upon the effectiveness of the particular parental training program utilized in preparing the parent to work purposefully on specified activites of a developmental nature.

The purpose of the present study was two-fold: (1) to document the effectiveness of the Center-Based and Home-Based Systems developed and operated as components of the Pennsylvania Research in Infant Development and Education Project (Dusewicz and O'Connell, 1973); and (2) to determine the relative merits of each of the three previously described delivery systems in effecting educationally significant gains in the development of participating disadvantaged preschool children.

Center-Based Programs

In early intervention research, the center-based delivery system has probably been the most intensely studied and most frequently employed of the three mechanisms. Some reasons for this may have been: the easy accessibility of children, for research and evaluation purposes, attending a center-based program; the advent of Head Start in 1965 as a center-based program; and the school aged nature of Title I of the Elementary and Secondary Education Act of 1965. The Center-Based System also has some rather obvious advantages over the other two systems in that it allows for direct access to the participating children for a relatively greater period of time and under conditions wherein a considerable degree of control of experiences and behavior may be exercised.

One of the most well-known programs, typical of the center-based system, was the Bereiter-Englemann Academic Preschool Program (Bereiter and Englemann, 1966). Here, participating children attended formal preschool classes which emphasized reading, arithmetic and language instruction. Another typically center-based program was that of the New Nursery School (Nimnicht, 1967). An autotelic

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responsive environment formed the basic medium for intervention in this approach. The participating children were permitted to explore freely in a specially constructed center-based environment which provided responses to explorations by the children in such a manner as to reinforce inquiry and discovery processes. Teachers did not teach as such, but served rather to assist and facilitate the child's self-directed learning.

Home-Based and Parent-Based Programs

Over the past several years, there has been an increased emphasis upon use of the home as the base of operations of a delivery system for early intervention efforts. The greater awareness, interest and involvement of parents in the early development and education of their children, together with new emphases in this direction at the federal level as exemplified by the National Home Start Program and other related programs, have certainly contributed to this trend.

Typical of the strictly Home-Based program was the Infant Education Project (Schaeffer, 1965) conducted in Washington, D.C. Here, home visitors worked directly with disadvantaged infants on a regular basis in the homes of these children and undertook various activities designed to enhance conceptual and language development.

The rising popularity of Parent-Based Programs, often in combination with a Home-Based approach which allows also for direct instructional contact between home visitor and child, can be attributed to a kind of rediscovery, in the field of education, of the parents as a valuable aid to the child's development. Studies on modeling, for example, have indicated that older significant persons in the life of the child often serve as models whose qualities and behavior the child attempts to emulate. In summarizing research on the actual effect or influence of such models, Bronfenbrenner (1968), concludes that measurable changes in the behavior of a child are facilitated by exposure to models exhibiting the desired behavior at an appropriate level of understanding for the child. The effect or

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influence of such models is even enhanced whenever there is strong emotional involvement present between the child and model, whenever the model is perceived by the child as having high status and whenever the model represents a group or affiliation of which the child is a member or desirous of becoming a member. A child's parents are in the rare position of possessing all of the above criteria for exerting a very powerful influence on a child's developing behavior patterns through use of the modeling process.

From the very inception of Project Head Start in 1965, parent involvement was viewed as an important element and many studies were done on the precise role played by parents in the development of their children. But here the concern with parents was only a secondary one and greatly subordinated to the center-based Head Start concept in which children were taught and cared for by a trained staff of teachers and paraprofessionals.

The Parent Education Project at the University of Florida (Gordon, 1967), typical of the Parent-Based Programs, adopted the approach of teaching low-income mothers to teach low-income mothers how to stimulate their infants. Relying heavily upon the normative work of Gesell, Catell and Bayley for the organization and sequencing of stimulational materials, emphasis was placed upon modeling for the mother who in turn would model the specified behavioral pattern for the child. Although there was some attrition on the part of the participating mothers because of declining interest and moving out of the immediate geographical area, the program was able to demonstrate the viability of the concept of its continued workability over time. There was also some evidence of beneficial effects upon the children as measured by testing at six months and one year.

Another typically Parent-Based Program, conducted at the Demonstration and Research Center for Early Education, involved the training of 20 low-income mothers to provide cognitive stimulation for their seven-to 18-month-old infants (Forrester, 1971). A home visitor worked in each home for approximately a one-hour period for a maximum total of 24 home visits. During the visits, attention

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was given to physical and social aspects of the home environment. The home visitor demonstrated and reinforced adult behavior patterns which provided for the physical, emotional, social and intellectual development of the infant. Results of pre- and posttesting indicated significantly higher scores for the experimental group over a control group on the Bayley Mental Scale, the Griffith Mental Development Scale and the Uzgiris-Hunt Infant Psychological Development Scale. Overall, the program appeared to be most successful in influencing favorably several areas of infant intellectual functioning.

Mixed Programs

In addition to the programs which may fall more or less neatly into one of the three different systems outlined above, there are other programs which employ combinations of two or more of these delivery mechanisms.

The Ypsilanti Home Teaching Project (Weikart and Lambie, 1968) represented a combination of the Home-Based and Parent-Based Systems. This program was an experimental effort designed to test the feasibility of sending teachers into the homes of disadvantaged families for the purpose of providing a training program for the mother, as well as a tutoring program for the preschool child without an accompanying classroom program. Only four-year olds and their mothers were included in the experimental sample. This program was individualized and involved a one and one-half hour visit each week. An attempt was made to raise the intellectual functioning of the child through direct child-teacher interaction, while at the same time attempting to foster teaching and child management skills in the mother-teacher interaction. Although acceptance of the project on the part of the mothers was quite good, results of testing on the Stanford-Binet and on the Peabody Picture Vocabulary Test yielded no significant differences between the experimental children and a control group of children.

Clarizio (1968) attempted to provide a different type of approach with emphasis upon small group meetings and counseling for parents. Three groups of

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four- to five-year-old children were used, two experimental and one control. Children in both experimental groups were enrolled in an eight-week summer Head Start program. The parents of one of these experimental groups were involved in small group meetings with staff as well as meetings in which guest speakers appeared. Parents of the other experimental group received the same treatment as above with the addition of an experienced social worker. The third group, the control group, was not involved in either Head Start or parent activities. Results on a teacher rating scale showed changes in the predicted direction, but these were not significant.

The Perry Preschool Project (Weikart, 1967) employed somewhat of a combination of all three delivery systems. This experimental project consisted of a two and one-half hour morning school-based program, with the addition of a home-based afternoon program. The participating children were visited one afternoon each week by teachers of the morning program who worked initially with the child during these visits and later with the parent on activities similar to those experienced by the child in his morning school-based sessions.

Research Design and Procedures

Over the past five years, the Pennsylvania Research in Infant Development and Education Project has enrolled over 170 disadvantaged children in its two principal component programs: the center-based program and the home-based program. Each had its own inherent advantages and limitations. Both systems endeavored to provide similar intervention programs to their participants and both worked from the same theoretical framework in terms of their perspective on curriculum. The theoretical framework for these programs has been documented elsewhere (e.g., Dusewicz and O'Connell, 1973; Dusewicz and Higgins, 1972). Briefly, unlike many other programs, the approach used here was aimed at accelerating the cognitive development of the participating children through first developing their perceptual skills and later their conceptual and language abilities. Cognitive development

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was enhanced through the progressive sophistication of the internal information processing system of the child.

The basic approach was to build a curriculum which would develop the individual senses and also focus upon behavioral task hierarchies that required integrative action of the various senses for successful completion. In this way, the child might proceed from simple to complex discrimination learning within each of his senses and then continue from the simple to the complex in the areas of tasks requiring the integration of information from two or more senses. Work on basic perceptual and discrimination skills utilized sets of materials which were developed for training in the olfactory, gustatory, auditory, tactile and visual senses. Proceeding from the development of a firm foundation of sensory perception, discrimination, and integration skills, emphasis was placed upon utilization of such skills to master various activities and tasks designed to develop the conceptual and language abilities of the child. In this way, the more basic sensory skills were applied toward the building of higher-order cognitive abilities. These higher-order cognitive skills upon which emphasis was placed during the second year or level of the program included, principally, the areas of reading and math.

Each of the two programs involved a two-year intervention sequence designed to accelerate the development of these children in order that they might reach a terminal level of ability in the areas of intellectual, language and social development approaching the norm for their age. To enable eventual comparative analyses between these two programs, as well as within program analyses, all participating children were selected from a large pool of interested families and were assigned to either of the two program groups strictly on a random basis.

Center program children were enrolled at 12-20 months of age and attended, daily, a four-hour morning instructional session in a large learning space at the West Chester State College Learning Research Center for the first year of the intervention sequence. During the second year, they attended a two and one-half hour afternoon session, daily, at the same location.

Home program children, enrolled at the same ages, were given instruction in their homes. They were visited individually by home tutors for two 40-minute periods each week. Through verbal stimulation and individualized instruction in developmental tasks, they sought to accomplish much the same in the way of objectives that the center program was directed toward accomplishing. Similar materials were utilized and activities undertaken, though within the constraints of a home-based delivery system.

The children participating in either of the above programs were from families: (1) with a mean annual income of less than $4,400; (2) 43 per cent of which were receiving public assistance and (3) 57 per cent of which contained only one parent.

All participating children were pre- and posttested each year on a large battery of developmental measures to assess progress in the areas of intellectual, language, and social development and in the areas of reading and math achievement. These measures included: the Bayley Scales of Infant Development or the Stanford Binet Intelligence Test (BSID/SBIT); the Peabody Picture Vocabulary Test (PPVT); the Verbal Language Development Scale (VLDS); the Vineland Social Maturity Scale (VSMS); the Preschool Assessment of Reading Test (PAR) and the Preschool Assessment of Math Test (PAM).

The BSID and SBIT were used in combination to provide a measure of intellectual development over the course of the program. The PPVT and VLDS were used to assess effects of the program upon the language development of the participating children. In the social development area, the VSMS was used to measure program induced gains. The PAR was a specially constructed sixty-three item

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instrument designed to assess reading achievement and contained items measuring word recognition and sentence comprehension. The PAM was another specially constructed thirty-three item instrument, designed to assess understanding of basic mathematical concepts such as quantitative relationships and one-to-one correspondence. Also included were task items relating to such skills as counting and numeral identification.

In addition to the two principal components of the Pennsylvania Research in Infant Development and Education Project described above, a third, Parent-Based component, was implemented and operated over a two-year period, superimposed upon the other two programs. Mothers chosen for participation in this program were randomly selected from those whose children were attending the Center- and Home-Based Programs. All mothers, selected in this manner, chose to participate in the program.

Each week, for each of the twenty participants, there was a one-hour session at which time the mother was visited in her home by a special tutor. The home-tutor discussed specific aspects of child development with the mother and provided related activities that the mother was to work on with her child at home. Each mother was asked to spend at least fifteen minutes per day with her child on the specified activities between weekly sessions, at a time when there was a minimal distraction in the home. The home-tutor also discussed any problems the mother may have had with the activities of the previous week and answered any questions posed by the mother.

Activities were designed to stimulate motor coordination, cognitive and language development, sensory discrimination and emotional and social development. Materials and toys were provided by the home-tutor when needed. Some activities required only common household objects. Activities were designed to increase contact between the mother and child and stressed areas which would help in enhancing overall development of the child.

This Parent-Based Program appeared to operate successfully in that the mothers gained a greater understanding of and interest in child development. They became more enthusiastic about their child's learning skills and assumed a more active role in helping their child develop these skills.

Since all children in the Parent-Based Program were simultaneous participants in either the Center- or Home-Based Programs, the same testing and data collection procedures outlined above for those latter two programs apply likewise to the Parent-Based Program.

Results

In order to effect intra-program evaluations, correlated t-test analyses of pre- and posttest data on all measures were undertaken for each year of each of the two programs. For these purposes, all participating children over a five-year period who had complete pre-post records were pooled in order to yield a more reliable evaluative determination of program effectiveness. These results are presented below in terms of either: mental age in months (MA); intelligence quotient (IQ); social age in months (SA); or raw score (RS).

The results tables presented on the following pages show for each test measure: the mean pretest score (Pretest); the mean posttest score (Posttest); the main gain in score from pre- to posttest (Gain); the correlated t-ratio resulting from analysis of pretest-posttest mean differences (t); and the level of statistical significance which the t-ratio exceeds (p).

As can be seen from Tables 1 and 2, the children participating in the Center-Based Program gained significantly in intellectual, language and social development during both the infant and toddler program periods. Even when maturation is taken into account, it is apparent that the rate of development of these children has been greatly accelerated as a result of the program. This can be appreciated when either gain or posttest mean for each of the test measures is compared with the similar gain or posttest mean under the age category. Significant gains were also evident in the areas of reading and math achievement during

the second or toddler year of instruction, while no test measures for these areas were employed at the infant level.

Table 1

First Year Center Program

Measure	Pre	Post	Gain	t	p
BSID/SBIT (MA)	16.13	30.67	14.54	23.03	.001
BSED/SBIT (IQ)	81	110	29	12.15	.001
PPVT (RS)	3.43	13.74	10.31	16.60	.001
VLDS (RS)	8.15	17.15	9.00	20.76	.001
VSMS (SA)	18.60	29.04	10.44	15.88	.001
AGE (Months)	20.99	28.50	7.51	-----	----

Table 2

Second Year Center Program

SBIT (MA)	35.57	49.84	12.27	20.37	.001
SBIT (IQ)	111	121	10	5.73	.001
PPVT (RS)	19.49	32.33	12.84	11.31	.001
VLDS (RS)	19.61	28.61	9.00	14.66	.001
VSMS (SA)	32.76	48.72	15.96	14.54	.001
PAR (RS)	0	7.54	7.54	-----	----
PAM (RS)	8.70	20.41	11.71	5.99	.001
AGE (Months)	34.30	41.93	7.63	-----	----

As can be seen from Tables 3 and 4 on the following page, the children in the Home-Based Program gained significantly in intellectual, language and social development during both the infant and toddler Levels as a result of their participation in the program. Even when maturation is taken into account (as reflected in the age data), it is apparent that the rate of development of these children has been accelerated greatly. Significant gains are also evident for math achievement for the second year of program attendance.

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Table 3

First Year Home Program

Measure	Pre	Post	Gain	t	p
BSID/SBIT (MA)	16.05	26.52	10.47	18.44	.001
BSID/SBIT (IQ)	80	95	15	7.36	.001
PPVT (RS)	3.53	9.40	5.87	8.90	.001
VLDS (RS)	8.08	15.06	6.98	12.62	.001
VSMS (SA)	19.32	27.24	7.92	11.31	.001
AGE (Months)	21.53	29.01	7.48	-----	----

Table 4

Second Year Home Program

SBIT (MA)	34.36	44.52	10.16	14.78	.001
SBIT (IQ)	101	106	5	2.43	.05
PPVT (RS)	15.29	24.24	8.95	7.13	.001
VLDS (RS)	17.72	25.69	7.97	10.69	.001
VSMS (SA)	29.76	42.96	13.20	9.45	.001
PAR (RS)	0	0	0	-----	----
PAM (RS)	5.70	15.39	9.69	4.85	.001
AGE (Months)	34.94	42.58	7.64	-----	----

As can be seen by the t ratios (t) and probability levels (p) in the above tables, participating children in both programs gained significantly each year on all measures. Moreover, it is apparent that gains exhibited by the Center Program in all cases exceeded gains exhibited by the corresponding Home Program, and these differences have been documented elsewhere by appropriate analyses of covariance of mean posttest scores for Center and Home Programs using pretest measures as the respective covariates (Dusewicz, 1974; Dusewicz and Higgins, 1972; 1971).

With respect to the Parent-Based Program, evaluation at two different levels is appropriate: the parent level and the child level. In terms of its effects on parents, the program appeared to be quite successful. Approximately midway through the program, all parents were administered the Knowledge of Infant Development Scale (Dusewicz, 1973) to assess their understanding of concepts and terminology in child development. Scores ranged from 21 to 29 of a possible 42 points. The mean score of 26.3 compared rather favorably with the mean pretest score of 25.3 and posttest score of 27.4 achieved by a group of 22 child care paraprofessionals

attending a centrally located 4-C (Community Coordinated Child Care) Manpower Training Course. The favorable findings of this program with respect to its effect on parents, both in terms of participant feedback and understanding of concepts and terminology in child development, demonstrate the considerable knowledge that can be absorbed and considerable progress that can be made by disadvantaged parents in the understanding of the nature of their child's development under conditions of adequate opportunity and motivation.

For the purpose of assessing Parent-Based Program effects upon children, analyses of covariance were performed on mean posttest scores for Parent-Based (PB) and Nonparent-Based (NPB) children with pretest measures serving as the respective covariates. Tables 5 and 6 show the results of such analyses in the areas of intellectual and language development for each year of each companion program, using the Stanford-Binet Intelligence Test (SBIT, with the Bayley Scales of Infant Development in the first year as the pretest and covariate) and the Peabody Picture Vocabulary Test (PPVT) as measurement instruments. As shown, all covariance analyses were found to be nonsignificant.

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Table 5

Center Program

	Test	N	Pretest	Posttest	F	P
First Year PB	BSID/SBIT	12	15.70	29.33	.03	NS
First Year NPB	BSID/SBIT	8	15.34	28.75		
Second Year PB	SBIT	11	35.64	50.18	.95	NS
Second Year NPB	SBIT	7	33.86	46.57		
First Year PB	PPVT	12	1.42	12.08	1.12	NS
First Year NPB	PPVT	8	13.38	13.71		
Second Year PB	PPVT	11	22.09	30.18	.17	NS
Second Year NPB	PPVT	7	17.71	26.57		

Table 6

Home Program

First Year PB	BSID/SBIT	8	16.37	26.38	.05	NS
First Year NPB	BSID/SBIT	11	15.52	25.18		
Second Year PB	SBIT	8	33.00	41.50	3.29	NS
Second Year NPB	SBIT	11	30.82	42.82		
First Year PB	PPVT	8	3.13	8.75	2.40	NS
First Year NPB	PPVT	11	1.27	8.73		
Second Year PB	PPVT	8	15.25	23.00	.10	NS
Second Year NPB	PPVT	11	14.64	21.27		

Conclusions

The intraprogram findings described in the results section have considerable significance in terms of their several implications for the field of compensatory preschool education. They demonstrate the effectiveness of the instructional approach utilized to bring about the consistent and statistically significant gains evidenced as a result of children's participation in either the Center or Home Program of the Pennsylvania Research in Infant Development and Education Project. Moreover, it is evident that the gains observed in both programs exceeded the normally expected growth rates for each measure when compared to the age gain over the program period of approximately 7 1/2 months in each year. It is interesting to note the sizable magnitude forfirst year intelligence gains in each

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program, particularly in the Center-Based Program where mean IQ rose 29 points during the program period. Equally interesting, however, are the relatively reduced gains experienced by the participating children during their second year of program attendance. While still statistically significant and above the normal growth rate, IQ gains in the second program year amount to approximately one-third of those in the first program year for both Center and Home Programs. Mental age gains, on the other hand, suffer only a slight decrement across the two years in each program. This appears to lend additional credence to earlier nonsignificant correlations between age of enrollment and magnitude of intelligence gain for children participating in these programs (Dusewicz and Higgins, 1972).

It is apparent from interprogram comparisons of Center and Home Program results that the effectiveness of the former is substantially superior to that of the latter in all areas for which evaluative measurements were taken. Since the same theoretical framework and instructional approach were employed with each, implicit in this effectiveness differential is the distinct superiority of the Center-Based Delivery System over the Home-Based System. For example, the findings presented in the Results section show the gain in IQ for the Center group exceeding by a factor of two the respective gain exhibited by the Home group each year. Although these findings may be tempered by the rather appreciable difference in program contact time between Center and Home Programs (a ratio of approximately 13 to 1 favoring the Center) it must be pointed out that it is generally not feasible to operate a Home-Based Delivery System for such services on anything approaching an equitable temporal level as a Center-Based System. Indeed, most Center and Home Programs elsewhere, for which descriptions are available in the literature, operate with contact times approximating those utilized in the present investigation. Additional differences of a practical nature, alluded to earlier in this paper, relate to the relatively greater degree

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of control which may be exercised over the participating children and their learning environment in the Center-Based System as opposed to the Home-Based. All of these factors undoubtedly contribute to the effectiveness differential between the two systems.

Effects on children related to superimposing or combining a Parent-Based Program with either a Center-Based or Home-Based Program were negligible, as evidenced by the findings presented in the Results section. Moreover, the directionality of differences in mean gains on intelligence and language development measures across Parent-Based and Nonparent-Based Program children was not even consistent. The interpretations placed upon these findings, however, are not nearly as clear as the findings themselves. There is no doubt that parents play a most significant role in the preschool development of their children. Their general life style, their attitude toward their children and what they do or do not do in the way of interacting with their children in large measure determines the extent of relative educational advantage or disadvantage with which these children will eventually start school. The question of primary concern here is not whether parents can significantly influence the development of their children, for we know that they can and do. Nor is the question how this parental effect compares with that of an effective preschool, for we know that the parental effect is stronger. The central question is whether or not an increase in purposeful parental participation in the early education of their children, resulting from a specialized training program aimed at giving them a better understanding of child development in general and activities which may be used to enhance such development, will result in consequent enhancement of the overall development of those children. Furthermore, will such enhancement compare favorably with the extent to which a child's development is regularly enhanced in some of our more effective Center- and Home-Based preschool programs. Because of the inherent limitations of this superimposing design, an accurate estimate of the absolute level of effect produced by

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the Parent-Based Program alone is not possible. The weight of evidence, however, posed by results observed in the present study would provide an answer to the latter question in the negative. The inconsistency in even the directionality of the superimposing effect would strongly indicate that, whatever effects are produced by the Parent-Based Program alone, they are of less magnitude than those produced by the Home-Based Program alone and therefore, do not compare favorably with either that program or the more effective Center-Based Program.

Since there are several general types of delivery systems available for educational intervention programs with preschool children but with only limited resources to support such programs, it is important that we know the relative effectiveness of each type on the educational development of the child. If this answer is important to the average middle class child, it is vital to the disadvantaged child. In this regard, the above findings raise important questions and point to certain reservations with respect to the recent trend toward forsaking Center-Based Delivery Systems in favor of Home-Based and Parent-Based ones. While the latter mechanisms for delivery of compensatory preschool services may provide a ready method for inducing a greater involvement of parents in the early educational development of their children, they may do so at the expense of the very developmental progress of their children which, in the final result, is the most important objective of all.

REFERENCES

Bereiter, C. and Englemann, S. (1966) Teaching Disadvantaged Children in the Preschool. Englewood Cliffs, New Jersey: Prentice Hall.

Bronfenbrenner, U. (1968) Implications of Follow Through Programs for the American School System. Early Childhood/ERIC.

Clarizio, H. F. (1968) Maternal attitude change associated with involvement in Project Head Start. The Journal of Negro Education, 37, 106-113.

Dusewicz, R. A. (1975) Early intervention for the disadvantaged. In Cull, J. G. and Hardy, R. E. (Eds) Problems of Disadvantaged and Deprived Youth. Springfield, Illinois: Thomas.

Dusewicz, R. A. (1973) A scale for assessing knowledge of child development. Education, 93, 252-253.

Dusewicz, R. A. and O'Connell, M. A. (1973) The Pennsylvania Research in Infant Development and Education Project. West Chester, PA: West Chester State College.

Dusewicz, R. A. and Higgins, M. J. (1972) On educating the disadvantaged infant. Pennsylvania School Journal, 120(5), 182-183, 192.

Dusewicz, R. A. and Higgins, M. J. (1971) Toward an effective educational program for disadvantaged infants. Psychology in the Schools, 8, 386-389.

Forrester, B. J. (1971) The Intervention Study with Mothers and Infants. A mimeograph from the Demonstration and Research Center for Early Education.

Gordon, I. J. (1967) A Parent Education Approach to Provision of Early Stimulation for the Culturally Disadvantaged, Final Report. Gainesville, Florida: University of Florida.

Nimnicht, G., et al. (1967) Research on the New Nursery School, Part I, A Summary of the Evaluation of the Experimental Program for Deprived Children at the New Nursery School Using Some Experimental Measures, Interim Report. Greeley, Colorado: Colorado State College.

Schaefer, E. S. (1965) Intellectual Stimulation of Culturally Deprived Infants. Mimeograph excerpted from Mental Health Grant Proposal #MH-09224-01.

Weikart, D. P. (Ed.) (1967) Preschool Intervention: A Preliminary Report of the Perry Preschool Project. Ann Arbor, Michigan: Campus Publishers.

Weikart, D. P. and Lambie, D. Z. (1968) Preschool intervention through a home teaching program. In Hellmuth, J. (Ed.) Disadvantaged Child. Head Start and Early Intervention. New York: Brunner/Mazel.